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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,062	10/30/2001	John W. Linebarger	1458	9876

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EXAMINER	
HOANG, THAI D	

ART UNIT	PAPER NUMBER
2668	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/020,062	LINEBARGER ET AL.	
	Examiner	Art Unit	
	Thai D. Hoang	2668	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed on 09/20/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) *29-40* is/are withdrawn from consideration.

5)☒ Claim(s) *56* is/are allowed.

6)☒ Claim(s) *1-12,14,15,18-20,22-28,41-50 and 52-55* is/are rejected.

7)☒ Claim(s) *13,16-17,21,51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 23-28, 41-48 and 55 are rejected under 35 U.S.C. 102(b) as being unpatentable by Smith et al, US Patent No.5,694,414, hereinafter referred to as Smith.

Regarding claim 1-2, 6, 8, 28 and 41-42, Smith discloses a method and system called "Multi-band, multi-mode spread-spectrum communication system." Smith discloses the system uses more than one frequency band, wherein selectable frequency bands include both licensed and unlicensed frequency bands, particularly frequency bands including the 902-928 MHz, 1850-1990 MHz (licensed), and 2.4-2.4835 GHz (unlicensed) frequency bands. The system comprising:

A transmitter (fig. 2) and a receiver (fig.3), wherein the transmitter and the receiver configured to communicate over licensed and unlicensed frequency bands, abstract, fig. 2-3 and 8-10, col. 3, lines 8-18 (a licensed spectrum transceiver configured to communicate over licensed spectrum; and an unlicensed spectrum transceiver configured to communicate over unlicensed spectrum);

a mode controller 103 to control licensed and unlicensed frequency bands for communication, fig. 2-3 (a spectrum selector configured to select the licensed transceiver or the unlicensed transceiver for communication.)

Regarding claims 3 and 43, in figure 8 Smith discloses the dual transceiver device 410 provides access to a select one of the plurality of sub-bands 402 in the first bandwidth 400 (licensed), and may be switched to provide access to a select one of the plurality of sub-bands 406 in the second bandwidth 405 (unlicensed), col. 14, lines 48-52 (wherein the spectrum selector is configured to select the other of the licensed transceiver or the unlicensed transceiver to transmit a second communication.)

Regarding claims 4 and 44, the controller 103 in the receiver (fig. 3) configured to receive a communication from both licensed and unlicensed frequency bands, abstract, fig. 2-3 and 8-10, col. 3, lines 8-18 (wherein the spectrum selector is configured to receive a communication from the licensed transceiver or the unlicensed transceiver.)

Regarding claims 5 and 45, in figure 8 Smith discloses the dual transceiver device 410 provides access to a select one of the plurality of sub-bands 402 in the first bandwidth 400 (licensed), and may be switched to provide access to a select one of the plurality of sub-bands 406 in the second bandwidth 405 (unlicensed), col. 14, lines 48-52 (wherein the spectrum selector is configured to receive another communication from the other of the licensed transceiver or the unlicensed transceiver.)

Regarding claims 7, 9-10, 46-48, in figure 8 Smith discloses the dual transceiver device 410 provides access to a select one of the plurality of sub-bands 402 in the first bandwidth 400 (licensed), and may be switched to provide access to a select one of the plurality of sub-bands 406 in the second bandwidth 405 (unlicensed), col. 14, lines 48-52 (the spectrum selector is configured to transmit a first communication to the unlicensed transceiver and a second communication to the licensed transceiver; the

unlicensed transceiver configured to transmit the first communication; and the licensed transceiver is configured to transmit the second communication.)

Regarding claims 23 and 55, Smith discloses the transmitter (fig. 2) comprises modulators 111 and 113, and the receiver (fig. 3) comprises demodulators 213 and 217. Moreover, the transmit information processing 101 (fig. 2) inherently comprises an encoder to encode information for transmission, and the received information processing 219 (fig. 3) inherently comprises a decoder to decode the received information (wherein the spectrum selector is configured to process a communication with at least one member of a group comprising encryption, de-encryption, coding, decoding, modulation, and demodulation.)

Regarding claim 24, Smith discloses the system comprises base stations and frequency ranges, see fig. 4-5 and 7 (further comprising a base station within a range of which the spectrum selector exists.)

Regarding claim 25, Smith discloses the system comprises a dual band antenna 109 for transmitting and receiving frequency bands (further comprising an antenna configured to transmit a communication via a spectrum or receive the communication via the spectrum.)

Regarding claims 26-27, in figure 8, Smith discloses a transceiver device 410 for transmitting and receiving information to/from the system (further comprising an access device configured to communicate with the spectrum selector, wherein the access device is configured to transmit, receive, or transmit and receive.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-12 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414, in view of Hamada et al., US Patent No. 6,873,607, hereinafter referred to as Smith and Hamada respectively.

Regarding claims 11-12 and 49, Smith does not discloses the spectrum selector is configured to select a first spectrum for operation and to select a different spectrum for operation if an interference event occurs for the first spectrum. However, Hamada discloses a system and method called "Interference detection method and an interference avoidance method." Hamada teaches that the interference in the R channels through which the subscriber stations (21 to 24) issue a call request to the base station (1) can be detected precisely, and time slot arrangement of the R channels is changed by detecting the interference to thus avoid the interference, abstract, fig. 4-12, col. 1, line 57-col. 2, line 9, col. 3, lines 49-62. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Hamada's method into the system disclosed by Smith in order to improve the quality of services and customer service because of changing the interference channels.

Claims 14-15 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414, in view of Shibutani, US Patent No. 6,940,824 hereinafter referred to as Smith and Shibutani respectively.

Regarding claims 14 and 50, Smith does not disclose the spectrum selector is configured to select a first spectrum for transmission of at least one communication for a guaranteed service. However, Shibutani discloses method and system called "Slot Assignment Algorithm." Shibutani teaches that the algorithms guarantee the minimum service to access terminals with poor channel conditions by allocating at least one slot group to each of access terminal groups with poor channel conditions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Karabinis's method into the system disclosed by Smith in order to improve quality of service and customer service as mentioned above with respect to claim 11.

Regarding claim 15, since Shibutani discloses the system supports mobile telecommunication 3rd generation and beyond. It indicates the system uses licensed frequency bands.

Claims 18-20 and 52-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414, in view of Karabinis et al., US Patent No. 6,892,068 B2, hereinafter referred to as Smith and Karabinis respectively.

Regarding claims 18-20 and 52-53, Smith does not disclose the spectrum selector is configured to select a first spectrum for operation and to select a different spectrum for operation if a capacity event occurs for the first spectrum. However, Karabinis discloses a method and system called "Coordinated satellite-terrestrial

frequency reuse." Karabinis teaches that if channels associated with one particular spot beam get too congest the system borrows or reuse frequency spectrum from other spot beams that have available capacity; fig. 8s, col. 20, line 46-col.21, line 61. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Karabinis's method into the system disclosed by Smith in order to improve the quality of services because the system avoids congestion.

Claims 22 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414 as shown above, in view of Agannatharao et al., US Patent No. 6,952,434 B1, hereinafter referred to as Smith and Agannatharao respectively.

Regarding claims 22 and 54, Smith does not discloses the system configured to process a communication with an inverse multiplexing asynchronous transfer mode (IMA) protocol. However, Agannatharao discloses the system, which comprises IMA group devices 150 and 106. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Agannatharao's IMA protocol into the system disclosed by Smith in order to speed-up the system since the IMA allows high-speed streams of ATM cells to be broken up and be transmitted across multiple T1/E1 communication links.

Allowable Subject Matter

Claims 13, 16-17, 21 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 56 is allowed.

The following is an examiner's statement of reasons for allowance:

Smith et al, US Patent No. 5,694,414, discloses a method and system called "Multi-band, multi-mode spread-spectrum communication system." Smith does not teach or fairly suggest the following features, which are recited in the independent claim 56 of the present application:

A method for selecting spectrum comprising:

configuring a licensed spectrum transceiver to communicate over licensed spectrum;

configuring an unlicensed spectrum transceiver to communicate over unlicensed spectrum;

configuring a spectrum selector to select the licensed transceiver for operation in a primary mode and to select the unlicensed transceiver for operation in a backup mode;

selecting operation for the backup mode when interference occurs for the primary mode; and

selecting operation for the primary mode when interference does not occur for the primary mode.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art with respect to the application:

US Patent Application Publication No. 2004/0192211 A1, Gallagher et al., "Apparatus for supporting the handover of a telecommunication session between a licensed wireless system and an unlicensed wireless system."

US Patent Application Publication No. 2004/0203815 A1, Shoemake et al., "Wireless communications system using both licensed and unlicensed frequency bands."

US Patent No. 5850596 A, Reynolds, "Method and system for making unlicensed priority transmissions."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D. Hoang whose telephone number is (571) 272-3184. The examiner can normally be reached on Monday-Friday 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thai Hoang

CHI PHAM
SUPERVISORY PATENT EXAMINER

1/23/06